

Application No. 10/042,935
Amendment "B" dated October 27, 2004
Reply to FINAL Office Action of April 26, 2004

REMARKS

The present amendment is in response to the Office Action of April 26, 2004. Applicants respectfully request consideration of the amendments made herein in view of the Request for Continued Examination and the Petition for Extension of Time by three months that are filed herewith. By the foregoing amendments, Claims 1 and 8 are cancelled and new claims 16-19 have been added. Accordingly, claims 2-7 and 9-19 are pending.

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. In addition, Applicants request that the Examiner carefully review any references discussed below to ensure that Applicants' understanding and discussion of the references, if any, is consistent with the Examiner's understanding.

The Office Action rejected claims 1, 3, 4, 8, 10 and 11 under 35 U.S.C. § 102(b) as being anticipated by *Kato, et al* (*Optical Coupling Characteristics of Laser Diodes to Thermally Diffused Expanded Core Fiber Coupling Using an Aspheric Lens*). Claims 2 and 9 were rejected under 35 U.S.C. § 103 as being unpatentable over *Kato, et al*. Claims 14 and 15 were rejected under 35 U.S.C. § 103 as being unpatentable over *Kato, et al.* in view of *Papademetriou, et al.* (U.S. Patent Application Publication 2001/0020164 newly cited).

As an initial matter, Applicants point out that independent claims 1 and 8 have been cancelled, and the only remaining independent claims are claims 14 and 15. Claim 14 now recites certain elements that relate to the ability of the optical device of claim 14 to receive high-power light without resulting in damage to a dielectric coating formed on a first end of an optical fiber that receives light from a focusing lens. In particular, claim 14 recites:

the light focused into the first end has an optical power that is large enough that contaminants or irregularities at the first end would cause the dielectric coating to be damaged if the light spot diameter were to be the same as the diameter of the first core in the unexpanded portion of the TEC optical fiber.

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Rather than the light spot diameter being the same size as the diameter of the first core in the unexpanded portion of the TEC optical fiber, the light spot diameter is defined in claim 14 as being:

larger than the diameter of the first core in the unexpanded portion of the TEC optical fiber, but no larger than the diameter at the first end of the TEC optical fiber.

In addition, claim 14 specifies specific ranges of the diameter of the first core at the first core at a first end of the optical fiber and at an unexpanded portion of the optical fiber (i.e., from 20μ to 50μ and from 6μ to 11μ , respectively). These parameters defined in claim 14, along with the configuration of the light spot and the expanded portion of the core, permit the high-power light to be coupled into the first end of the optical fiber without damaging the dielectric coating. Again, it is noted that claim 14 specifies that the optical power is large enough that contaminants or irregularities at the first end would have caused the dielectric coating to be damaged if the light spot diameter were to have been the same as the diameter of the first core in the unexpanded portion of the TEC optical fiber.

Thus, the foregoing elements of claim 14 define an optical device that can receive high-power light without experiencing damage. In contrast, the Kato, Papademetriou and the other cited references are silent as to the problems associated with damage of a dielectric coating in the presence of highly focused high-power light. Indeed, the cited references fail to disclose the use of a dielectric coating at the end of an optical fiber. Because the cited references do not identify the problem of dielectric coating damage, the cited references fail to specify the configuration and the specific dimensions and parameters of claim 14, which permit high-power light to be coupled to an optical fiber without damaging the dielectric coating.

Moreover, because the references are silent with respect to dielectric coating damage, the references do not teach or suggest the element of claim 14 regarding the damage that would have been experienced if the light spot diameter were to be the same as the diameter of the first core in the unexpanded portion of the TEC optical fiber.

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Thus, Applicants respectfully submit that claim 14 is not obvious in view of the cited references for at least the reason that the cited references fail to teach or suggest the elements of claim 14 outlined above. For at least this reason, claim 14 is in condition for allowance.

Claim 15 is a method claim that includes elements that are substantially similar to those discussed above in reference to claim 14. Thus, Applicants respectfully submit that claim 15 is also in condition for allowance.

The other claims are dependent from either claim 14 or claim 15, and are in condition for allowance for at least this reason. The dependent claims also further distinguish from the cited references. For example, claims 16 and 18 define the optical power as being at least 1W.

Applicants respectfully submit that the cited references do not disclose an optical power of at least 1W in connection with coupling light into an optical fiber as defined in claims 16 and 18.

Furthermore, claims 17 and 19 recite:

the light spot diameter is at least 20μ ; and

the optical power that is small enough that contaminants or irregularities at the first end do not cause the dielectric coating to be damaged when the focusing lens focuses the light into the first end of the TEC optical fiber.

For the reasons discussed above in reference to claim 14, the cited references do not teach or suggest the light spot diameter and the lack of dielectric coating damage as specified in claims 17 and 19.

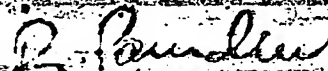
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CONCLUSION

In view of the foregoing, Applicants believe the claims as amended are in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 26 day of October, 2004.

Respectfully submitted,



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